ABSTRACT

A multi-dimensional imaging device and method for automated exposure control that implement two distinct modules to control the exposure and gain settings in the imager so that processing can occur in a multi-tasking single CPU environment. The first module, referred to herein as the imager control module. controls the exposure and gain settings in the imager. The first module is typically implemented in a high priority routine. such as an interrupt service routine. to insure that module is executed on every captured frame. The second module, referred to herein as the histogram processing module. calculates a target contrast (the product of the targeted exposure and gain settings) based on feedback data from the first module and image data from memory. The second module is typically implemented in a low priority routine, such as a task level routine, to allow for the routine to be executed systematically in accordance with priority.